

MEASURE



SPRING 1962

Saint Joseph's College



OUR COVER: The awakening of nature in the spring closely parallels the awakening of our knowledge through our senses—a perceptive awakening, which may find beauty in the spring.



st. joseph's college

spring

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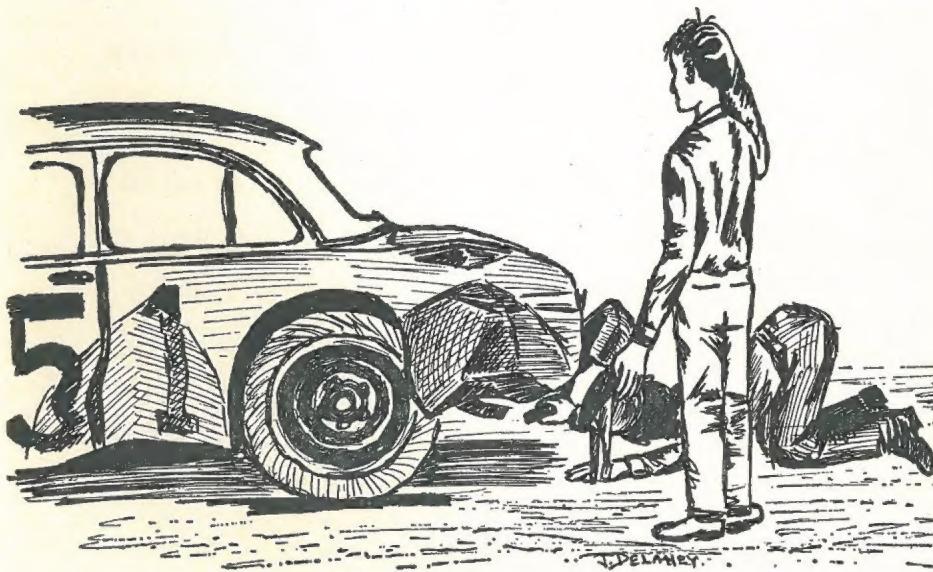
The Glory of

by

Michael
'Y. J.'
Thoele

At some time in every man's life there comes the call to be a hero. Not to be a noble, generous hero, but a devil-may-care, swash-buckling hero in the grand and glorious tradition of Odysseus, Robin Hood or Captain Kidd.

My call came on a hot July night in 1961. I was sitting on a splintered, dirty plank in the fifth row of the seventy-five cent bleachers at a local stock car track. Beside me was a good friend, two years younger than myself, Johnny Stumier. Johnny was a high school dropout and I was the proud veteran of a year's collegiate education at one of the Midwest's more obscure denomina-



it All

tional institutions. The only thing the two of us had in common was a burning illogical passion for sitting on dirty splintered planks at stock car tracks where antiquated automobiles (vintage 1930-1950) play a weekly southern Illinois version of four-wheel pin ball. The cars are fenderless and dilapidated, but usually well-tuned and able to clip the regulation quarter mile oval in 14-22 seconds at a speed of forty to fifty miles per hour.

The first heat race of the evening had just ended and we were blinking the track dust from our eyes. The announcer on the track's squawky, occasionally-functioning PA system began bawling out a line of race-track promoter propaganda.

"Ladies and gentlemen, we are proud to present to you southern Illinois' finest in stock car racing. These boys are out here to give you a good show. How about giving them a little hand to show your appreciation."

A little hand was given.

The announcer continued, "These boys you see tonight are fine examples of racing talent. They have razor-sharp reflexes and quick judgment necessary for all expert race drivers and they're out here to give you a good show."

Johnny and I both grinned. The announcer had somehow over-

looked explaining why these "fine examples of racing talent" wasted their razor-sharp reflexes and quick judgment pushing plows and digging ditches six days a week. The truth, of course, was that all of them were local "civilians" who had put out fifty dollars or so for a wreck or near-wreck and thereby committed themselves to one, two or even three nights a week of being pushed, banged, broadslid, and shoved around the various tracks in the area. The number of nights spent each week in this dubious pastime varied directly with that amount of cash, baling wire and Yankee ingenuity available to keep one's precision racing machine in shape.

The announcer went on. He explained that "any of you that would like" could join this elite and talented group by purchasing a car, a helmet and a set of seat belts, and returning the following Thursday night. Evidently at that time razor-sharp reflexes and quick judgment would be infused in all neophytes.

And then, like a bucket of paint dropped from a ladder, the call hit me. Some of the paint splashed because it hit Johnny too. For two seconds we looked at each other and then we both started talking. We talked all the way home and then got together and talked some more the next night.

Things happened swiftly during the following week. For the grand sum of thirty-five dollars we acquired our precision racing

machine—genus, Ford; vintage, '51. We knocked out all the glass and borrowed a helmet and seat belts. By Monday we were itching to go and counting minutes until Thursday night.

It came. Johnny and I met after work. He had skipped supper and most of mine had been left untouched. Silently, apprehensively, and in a manner disgustingly unswashbuckling we hooked up our homemade tow bar to take the car to the track some twenty miles away.

Little was said on the way. The two of us sat in perfectly unconcerned silence, just as if we were heading back for another routine Thursday night on the splintered planks and just as if that awkward blue automotive albatross wasn't hooked to our back bumper.

This comforting illusion was all too quickly shattered as we approached the fairgrounds and a traffic-directing state police officer, smiling like a dentist's receptionist, waved us into the lane marked "CONTESTANTS." We drove into the pits and unhooked the tow bar.

Qualifications were to start within fifteen minutes, so, in as offhand a tone as possible and with generosity that would have done an archangel proud, I said to Johnny, "You laid out most of the money for the car, so you can qualify and drive the first race."

"Like hell."

I pulled onto the track. There were five or six cars already on

deck warming up in the last few minutes before qualifications.

It had rained the night before and the banked clay, having an absorbance akin to cast iron, was like a greased bowl. I traversed the main straightaway with my eyes on the rear view mirror and my left foot on the brake. Coming into the first turn I noted with surprise and disbelief that I was still alive and whole, so I decided to play like one of the boys and shoved the gas down. The rear end slid out. I spun the wheel frantically in the direction of the slide. The car behind me hit like the Wabash Cannonball and caved in the rear quarterpanel. I coasted into the infield.

The rest of the cars continued their circuitous routes. Hopefully, I looked toward the stands for some recognition of the horrible, metal-rending spectacle I had just provided them. Red-faced, I realized that the bump was typical, one which would have caused no one, myself included, to raise his posterior from the splintered planks. I started the car and pulled back onto the track.

After a couple of relatively uneventful laps the order came to clear the course. I drove back to the pits and got into the long line of cars waiting to qualify.

Johnny came up and inspected the damage. "Looks pretty sharp."

I smiled weakly and made a valiant effort to appear unconcerned. My knees made no such effort.

My returning composure was rapidly shattered. Our number was

called to qualify. I tried a quick helmet hand-off to Johnny but he shoved me back into the car.

Qualifications are a relatively simple affair. Each driver takes two laps around the track. The second lap is timed. When the cars are lined up for the race the slowest qualifiers are placed first. Democratically this system lacks a little, but from the promoter's viewpoint it's money in the bank since the faster cars must inevitably pass the slower ones, thereby enabling the drivers to "give all you people a good show."

My first lap, despite my heavy foot on the gas, was uneventful. As I came down the straightaway I got the green flag for my qualification lap. I hesitantly shoved the gas pedal to the floor and went through the first turn like a pro. Halfway through the second one things began to happen. Once again the aft end of the car tried to pass the fore. I came broadside into the backstretch and turned a complete circle which ended in my old haunt, the infield. My ardor dampened more than somewhat, I pulled back onto the track and negotiated the last two turns for a qualification time of 26 seconds. By far the slowest time of the evening, if not of the season, I had yet won the pole position, which guaranteed that, for twenty laps, some twenty-five or thirty cars would be doing their best to get over, under, and around me.

The field was lined up. Since common practice called for a flying start, several pace laps were

necessary. Round we went, the whole pack bumping and snarling like lions waiting to be loosened on Christians. Behind me was a particularly irksome and competitive individual who was employing his razor-sharp reflexes and quick judgment to repeatedly drop back fifteen or twenty feet and then plow into my trunk. Meanwhile the gentleman on my right, who had his own designs on the pole slot, was doing everything in his power to sideswipe me into the infield.

On the third lap the green flag was given. With a roar all hell broke loose. Six or seven cars passed me on the first turn and midway through the first lap I had been relegated to eleventh position. My only satisfaction was that my friend to the rear, who had previously seemed so intent on mating his front bumper with my spine, was still to the rear. The second lap passed without major calamity. I was getting hit about once every twenty feet, but the traffic was so thick it was impossible to spin out.

Then it happened. Halfway through the backstretch on the third lap my tailgating friend tried to pass on the inside and snagged his right front fender on my previously battered left quarter panel. I was spun sideways. The car that was leading the race, and in the process of lapping the field, sailed full tilt into the left side of the car. At the same time two other cars hit me and several others piled into them. The impact knocked



my car clear. The rest of the field was skirting the melee. Shakily I pressed onward.

The nose-scraping had helped my cause very little, for when the dust cleared and the caution flag was furled, six cars were out of the race, but I was in fifteenth place and being passed like a horse and buggy. The contest dragged on for several more laps till (mercifully) the checkered flag was waved. I had finished fourth-last.

Two of the cars behind me had flat tires and the other I had passed as he ran out of gas on the last lap.

I navigated back to the pits, faltered into a parking place, unbuckled the safety belt, kicked open the smashed door and stepped out. I tossed the helmet to Johnny.

"How was it?" he asked.

"Sharp," I answered.

"You'll see," I thought.

The Stranger Within

by Francis Creel

Politicians, I am convinced, are really a breed apart, separate creatures veneered in only the externals of humanity.

And this is not idle speculation. I am speaking from experience. Do not mistake me; I am not a Politician. But for one, frustrating week, I attempted to be, and it was the very frustration of that attempt which persuaded me that beings who seek office are a race unto themselves, and a superior race at that. For they never lose. That I lost my campaign is positive proof that I am a man and no more, excluded by nature from the ranks of those in whom political power naturally resides.

The reasons these creatures do not lose can perhaps best be seen as implied in the reasons I did lose when I ran for a student government office in college. By temperament and by preference, I am a Platonist, a latter-day disciple of Aristotle's teacher, who, alas, was not a Politician either. According to Plato, you know, a man should not seek office, but should only accept it reluctantly when it is forced upon him by an insistent and unsolicited constituency, and motivated only by his fear of punishment (the punishment of being governed by men worse than himself). The True Politician, of

course, sees the foolishness in this, but I, thinking it the ultimate in political sagacity, remained sedately in my Platonic virtue, waiting to be forcibly enthroned.

Since, however, installment in office in America is a democratic affair and I knew I would have to undergo the customary procedure of receiving the requisite number of votes, I considered the prompting of several students sufficient to overcome the political modesty required of me by Plato. I declared my candidacy one week before the election.

By that time, my more formidable opponent, a True Politician, had for two weeks been diligently preparing to seize the office he knew would be his. (There was another non-Politician in the race besides myself, but since his impact on the election proved to be even less consequential than my own, we shall ignore him.) The Politician in this episode, though, demands our careful consideration because of his inestimable importance on the biological and the psychological sciences, just as the discovery of a new sub-oceanic fish, or, theoretically, of a beetle that talks would prompt meticulous analysis by these same sciences.

His unusual appearance is not impressive, and he speaks in a New England accent unpleasant

to Midwestern ears, but undoubtedly he had reasons of his own for coming amongst our race in this unassuming guise. Indeed, one of the most redoubtable attributes of these Politicians is the absoluteness of their nature from any mode of outward appearance and their grace and unpretentiousness in easing in and out of any garb they may wish to present to the world of gullible humanity.

The unpleasantness of the New England accent is extenuated somewhat by a smile thoroughly affected with apparent unaffection, and there is a certain congeniality about him when things are going as planned. When he is opposed, however, by circumstances or by the stubbornness of humans, he can become very ungracious. This is so, undoubtedly, because Politicians recognize the superiority of their judgment and, in assurance, find it difficult to tolerate human ignorance, thus occasionally making themselves overbearing to people around them. John Wilkes Booth, for one, resented this tendency Politicians have.

At any rate, Politico, as we shall call him, was running the show. He displayed, throughout the campaign, a surprising ability of organization, just as humans, because of their superior intelligence, find it easy to herd sheep. And he was able to use a few chosen humans to manipulate other humans for him, just as we can use animals, such as sheep dogs, to keep other animals under control.

The details of the campaign are

repugnant to my reminiscence, so I shall pass by them by saying that Politico made no blunders, or, if he did, he made them seem like calculated stratagems. I made several mistakes in my campaign, but even a faultless attack would have made little difference; for, everywhere I went, Politico had preceded me and gathered the voters in his long and dedicated entourage. Getting them out of his entourage was like rustling cattle.

At the end of the campaign, when the balloting began, Politico told me he was confident of victory. I felt I should agree with him, but this was at a time when I was not certain that he was a True Politician, nor certain that I was not a True Politician. The supreme test, I repeat, is victory or defeat. A True Politician is never defeated, unless by another Politician, and in a race between two members of that yet uncategorized race, the election is always close. The most recent American presidential election is the best example of this that I can think of.

The evening of the election, as the counting of the ballots progressed, Politico became concerned. He nervously puffed his way through three cigarettes. He was not devastating me as completely as he had thought he would, and he probably thought he might be up against a fellow Politician. Even I began thinking I might perhaps be a member of this super-race. Why didn't I realize it if I was? Very simply because a Politician has to win an

election before he becomes conscious of his inherent superiority. One must have the opportunity to breathe rarefied atmosphere before one can realize that he is a born mountain-climber.

A third of the way through the count, however, it became evident who was the Politician and who was not. Politico began to devastate me.

During my devastation, I began to wonder about the nature and origin of these other beings. Are they from another planet? What motivates them—why are some Politicians benevolent and others oppressive? What are their physical characteristics in their natural state, stripped of their human impersonations? Are they physical at all? Are they related to the chameleon? These questions are some of the ones science will have to answer as it gathers more and more data about these strange creatures.

As Politico neared the simple

majority he needed to win, I arose and picked my way through the crowded room to be the first to congratulate him.

He was smoking a cigarette, no longer nervously, as I approached him. Through the smoke floating around his head, I noticed, for a single moment, an expression in his eyes which I have never seen in the eyes of us non-Politicians, an expression in eyes which service a brain regulated to a cosmos different from our own.

I was certain before, of course, that Politicians are creatures wholly different from us, whom they seem destined to dominate, whether for good or ill. But that fleeting moment of proximity with Politico in his time of victory added the final coat of lacquer to my certitude: as I congratulated him, his hand felt like the color blue. It felt like I was shaking the hand of an image on a coin—and a foreign coin at that.

Official Guest—A diplomat who compares bribes.

—Robert Blackwood

Russian—A Mongol in a business suit.

—Robert Blackwood

The Dramatic Revolt

There are rumblings in the East. New York City, America's showcase of progress, is undergoing revolution. It is a quiet one, a bloodless one, a subtle revolution—but it is real. The revolutionaries are using weapons that we have not seen before. Those who are skilled in these matters thought that they knew all the tricks and tools, but many of them are taken by surprise. They are awed by these new phenomena which they cannot explain.

The scene of battle is the theatre; the revolutionaries are the new breed of playwrights, revolting against the stale themes and methods of Broadway. Their weapons are radically new ideas and unheard-of techniques, which are shocking and jolting their way into acceptance. Even many of

those who earn their living by criticizing are at a loss for words because they too do not, as yet, understand the movement.

There are two phases to this revolution. The first is the destruction of all those things which now limit, and sometimes stagnate, conventional American drama. It is the abolition of time-honored staging concepts, like the ancient, yet current, idea that the audience is secretly peering into a house through the invisible fourth wall, or from behind a bush, if the scene is outdoors. The new playwrights are so extremely conscious of the audience that they include it in the play! Actors walk the aisles, speaking with the people; a man sitting in the audience, whom everyone assumed to be a spectator, suddenly jumps up and runs onto the stage, where he becomes part of the play; actors stare accusingly at the audience. These are some of the techniques of what is called experimental drama. In

by Norm Netko

some ways, the movement seems like a regression to ancient drama, in which the audience played a large part.

None of this is happening on Broadway. Broadway is the drawing card of New York, and to a great extent, of America; it has a reputation to uphold. It is also the refuge and status symbol of the upper class, who support it. As long as *they* are conservative, Broadway will be conservative. Therefore, the new playwrights must take their radical schemes elsewhere. Where do they go? Why, Off-Broadway, of course. And enough radicals have done this to make Off-Broadway something almost respectable. New techniques, however, constitute only the first revolutionary blow. The second is much more significant.

If one were to scan the current Broadway theatre announcements, he would find a variety of subjects. He has a choice of musical comedies like *Camelot* and *How to Succeed in Business Without Even Trying*. If he is the *Ben Hur* type, he has Paddy Chayefsky's *Gideon*, a biblical story. *Romulus and A Man for All Seasons*, a story about Sir Thomas More, provide historical sketches. Perhaps he likes to read novels. E. M. Forster's *A Passage to India* and *The Aspern Papers*, by Henry James, have been adapted for stage. Then there are always the older plays that have been revived.

But where are the new plays by contemporary writers, artistically

written to reflect and comment upon our own times? We find few examples on Broadway, the most important one being *The Night of the Iguana*, by Tennessee Williams. However, the theme of Williams' play, one of despair and psychological morbidity, is rather shopworn. Once again we look Off-Broadway, and there, among the beatniks and other non-conformists, we discover our present-day dramatic art. Closer inspection, though, reveals something else: a new trend. This is the second phase of the dramatic revolution.

Even Tennessee Williams admitted, in an interview, that he was on his way out, that his gospel of intense individual pessimism is no longer popular. The psychological theme is being replaced by the sociological. After a period in which man was represented as an island, ruined by his own passions and vices in a meaningless world, we now see him as a necessary part of society, a being whose actions and words and prejudices are responsible for the good and evil in the world.

One great fact of the sociological theme deals with racial relationships. *Raisin in the Sun*, written by a Negress, Lorraine Hansberry, is the first Broadway production of a work by a colored authoress, and the first one directed by a Negro (Lloyd Richards). The play treats the familiar problem of Negroes moving into white neighborhoods, and the unfortunate results of such an action. Its theme—the constant striving of

the Negro for recognition and a better way of life—is not powerfully presented; but the play, staged on March 11, 1959, broke the trail for a series of other more dynamic, works that followed.

The most significant current play dealing with a racial theme is *The Blacks*, by Jean Genet. Confusing but shocking, it was written for white audiences, although the entire cast consists of Negroes. The Negroes are divided into two groups. The members of one group wear white masks and are dressed as a queen, a governor, a missionary, and a valet. They represent many of the hated faces of white society who hypocritically (they are really black) judge the Negroes. The second group are the Negroes being judged, for murdering whites. At the end, those being judged kill the pseudo-white jury.

The play is a spectacle, rather than an image of reality; it is a primitive type of drama like that found in tribal and religious rituals. In fact, the Catholic ritual is used: a hymn of hate is chanted as a litany, and at one point, the Kyrie is intoned; there is a central table, a coffin, at which the Negroes daily re-enact the killing of their victim. It is like a Black Mass.

Present are also the new techniques. The Negroes being judged stare accusingly at the audience, who are, after all, the hypocrites represented by the masked Negroes. The long moment of silence is bound to grip the audience. To add emphasis to the indictment, a

character destroys any notion that this is make-believe when he says, "This is the theatre, not the street."

Robert Brustein, commenting in the *New Republic* (May, 1961), made an important observation: good drama centering around the racial theme is long overdue. Too long has the Negro been depicted as a shadow lacking substance. He was either the passive object of white man's guilt, prejudice, or kindness; or he was carefully presented as being exactly equal to everyone else. In either case, he did not have character.

Other examples of the racial theme include "*Moon on a Rainbow Shawl*", the story of a Negro bus driver who strives to better his position in society, and *Black Monday*, a picture of school integration in a southern town. Two musical comedies, *Fly Blackbird* and, on Broadway, *Purlie Victorious*, treat lightly the problem of integration. Perhaps the depiction of this national sore of prejudice, bringing it out into the open, is what our society needs before it can cure itself; confession before repentance.

Dope addiction, another sociological problem of our time, is portrayed by Jack Gelber in *The Connection*. A group of heroin addicts wait in an apartment for their "connection" to arrive with the drug. Meanwhile, they expose themselves through meaningless stories and unfinished confessions. They defend their use of dope as a means of protesting against the

conformity of American society, against war and the hydrogen bomb.

As in *The Blacks* the audience is identified with the characters, the addicts. The haughty notions of the audience concerning the baseness of the addict are smashed as soon as they realize that their own habits are being ridiculed: they too attempt to escape reality through tranquilizers, vitamin pills, alcohol, and their constant striving for material success.

Two actors, identified as the director and producer, speak with the audience and then ascend the stage carrying motion picture cameras. They attempt to photograph these beatniks, another satire directed at the curiosity seekers in the audience who go "slumming."

Eugene Ionesco, another important rising playwright, draws upon the impossible to bring out his point. In *Rhinoceros*, he condemns the blind conformity in our society and in the world, by having each of his characters, except one, turn into a Rhinoceros simply because everyone else was doing it. In an interview, Ionesco revealed that he was attacking, among other things, "leftist and rightist rhinoceritis" in human beings who do not think, but impulsively join fanatical groups.

The Killer, also by Ionesco, is a satire on the welfare or socialistic state, represented as a utopia in which the people are not happy but do not know where to go. Through the voice of a soap-box orator, the author even attacks

the Soviet Union directly.

There can be little doubt that American drama is undergoing radical change. A new sense of dramatic art, coupled with daring staging methods, are freeing the legitimate stage from the shackles of realism, which, according to some, are killing American drama. However, these "shock" techniques and fantastic plots, if they can be called plots, are not as new as one might think. More than forty years ago, the American stage played host to a movement termed "expressionism," which likewise sought to liberate drama from the bonds of realism.

Fire-Alarm, by DeGross Wilbur, and Elmer Rice's *Adding Machine*, both produced in the 1920's, were similar reactions against the conventional rules governing dramatic art. The playwrights of that day, desiring unlimited freedom of expression, emphasized symbolism to such a degree that they were talking only to themselves. The public, being unable to understand what the author was saying, lost interest, and expressionism gave way to the return of realism. Audiences today are more educated and better able to comprehend intense symbolism, but will the public accept drama which demands deep concentration? Or will they, after getting over the initial shock of the new methods, reject them in favor of the more relaxing, conventional ways of realism, as they did in the past?

The new trend toward sociological themes—be they racial, ad-

dictional, or political—is also a liberating force: man is released from the prison of his own mind and made a vital part of society, a much truer picture of a being who is, by nature, social, who has lived with other beings ever since he was created.

The leaders of this dramatic revolt, as all revolutionaries, are protesting against something. They are trying to overthrow the existing taboos and the dominant psychological philosophy of present-day drama. But more, they are publicizing the great problems of our age and are attacking those

who are responsible for them—the audience and everyone else who is guilty of haughty hypocrisy, attempting to escape responsibility, blind conformity, and the hate of racial prejudice. Rather than a vague appeal to "brotherhood," the new drama poses solutions for our problems by pointing to the audience. The public must realize that they, in their pride and selfishness and lack of interest, are responsible for the continuance of all the corruption around them. This is the message of the new drama and the purpose of the dramatic revolt.



THE SUMMER

On a crisp December evening, two women sat at dinner in a dim, candlelit room, expensively but not handsomely furnished with mahogany. Edith Calders, the elder, was a large woman nearing sixty-five. She had a loose, sallow face, almost completely devoid of expression, and topped by a swirling mass of black hair. Miss Colbert, Edith's sister, was about ten years younger. She was considerably thinner and had sharp features. Both women wore the black of mourning.

Edith put down her soup spoon and rang the bell without glancing to see if her sister had finished. Frowning at the untouched bowl to her right, Edith said to Lucy the maid, "I'd quite forgotten that Mr. Calders doesn't care for vegetable soup."

"Yes, mum." Lucy cleared the soup bowls. She returned momentarily with a roast; and, after Edith had hepled herself, Lucy went to Mr. Calders' place heap-ing his plate. Then Miss Colbert was served and Lucy returned to the kitchen.

"He doesn't care for vegetable soup," Lucy said. Cook said nothing.

"It's creepy," Lucy continued, looking at the cook. "Creepy, I tell you, setting food in there in front of an empty chair three times a day. And listening to the

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by
David Tetenau

two of them talk just as if he was there. Sometimes I get the feeling that he is there, and I don't like it."

"We are not to judge," Cook replied.

The bell rang and Lucy hurried from the kitchen with a heavy, covered vegetable dish. "I hope he likes this."

Later, after she had carried coffee and liquors to Edith and Miss Colbert in the small parlor, Lucy went to the kitchen for her own supper. From there, in the moonlight, she could see, far down the garden path, a white mausoleum. "It's damn creepy," she said half aloud.

"What?" asked the cook.

"I just said it's damn creepy. And that mausoleum in the moonlight . . . When did she dig him up?"

"What?"

"I mean, when did Mrs. Calders build that mauso—I mean summer house?"

"It was finished almost a year after Mr. Ernest passed away," said Cook.

"Yes?"

"Yes, what?"

"Oh, tell me. I want to know."

Cook sat down. "I do not gossip about the family's affairs."

"It's not gossip," said Lucy. "I'd like to stay here. I want to stay—the pay's good. Anyhow, I'd just like to know the story. Maybe after that, it wouldn't be so creepy."

"You are my niece," said Cook. "I told you about the job before you came here. Mrs. Calders seems

to be satisfied with you. Isn't that enough?"

There was silence. Finally Cook got up and poured herself a second cup of coffee.

"Lucy," she said, "I was in this house when Mr. Ernest was born. I knew him all his life. I've known Mrs. Calders and her sister since they were little girls—I was glad to see Mr. Ernest marry Miss Edith—They were such pretty little girls." She paused—Lucy waited.

"Mr. Ernest never liked the damp, Maria. He never wanted to be put in the ground. He had the summerhouse started. Wasn't finished in time though. And he wasn't 'dug up.' Miss Edith put him in the icehouse until the tomb was—I mean the summerhouse—was finished. And when he was moved there, he looked just like he was asleep. I helped Miss Edith change his clothes. Poor Miss Edith. She just can't get over it, and if it makes her happy, or Miss Colbert to pretend he's still here, well—"

"It's still creepy," said Lucy.

"Poor Mr. Ernest! He always hated the damp so," said Cook. She got up and started for the stairs, "After the dishes, don't stay up too long—and don't forget the lights. Good night."

The dishes washed and the lights attended to, Lucy went upstairs. She lit the lamp in Mrs. Calders' room, then in the one adjoining. Here she turned down the bed, plucked a withered flower from a vase on the bureau and threw it into the fire. From a large wardrobe, she withdrew a nightshirt, a

robe, and a pair of slippers. These she carefully arranged, noting from the corner of her eye a small photograph on the bed table. She picked it up and for a moment looked at the handsome, blond, rather weak-faced young man in the gilt frame; then, with a shudder, she replaced the picture and went on to Miss Colbert's room.

The furniture here was shabby; the bed looked uncomfortable; and the fire was out. There was no coal in the hopper.

"Miss Colbert prefers a room on the cool side, Lucy," Mrs. Calders had said. Miss Colbert had shown no preference. But tonight, thought Lucy touching the clammy bed, tonight! It won't be too warm tonight. Hearing Edith and Miss Colbert coming up the stairs, she went quickly to her room and locked the door.

"My dear," said Edith, "wouldn't you like to say good night to Ernest this evening? He is so fond of you. And I musn't be selfish. I'm not selfish am I, dear?"

"No, Edith. You are not selfish."

Edith leaned toward her sister. "I try not to be. Oh, what would have become of you? What would have happened. But now; run in—bid Ernest good night. And then after you've gone, I'll come in. A wife needs a longer time to say good night to her husband."

"Good night, Ernest," said Miss Colbert. "Good night, Edith."

Edith laughed. Her sister could still hear the laughter long after she had bolted the door of her

room.

It was cold. Even her heavy shawl did not keep Miss Colbert warm. The bed might have offered some warmth, but Miss Colbert, after taking a packet of letters and photographs from her trunk, sat in front of the cold fireplace for a long time, holding them close to her. Her eyes filled with tears; her hand went to her head in a hopeless gesture. "I can't put you away, Ernest," she said. "I can't put you away just now. Oh how long must it be? How long? I can't stand much more. And I can't go. Where would I go?"

She got up, walked to a mirror, turned sharply without looking at her reflection and sank onto the bed. "I was young and you loved me. You said you did, Ernest, and I believed you. Why did you do it? Why? Why did you let me come here and why did you let her bring me here? Oh, yes—I know. There was no place else to go. There's no place to go when you're all alone and poor. No safe place and Edith knew it. Oh, Ernest!"

A light still showed under the door of Ernest's room. In that room Edith was talking. "Ernest you musn't be cross with my poor sister. Such a short good night—and you so kind to her—always so kind. Such a comfort, too. I don't know what I would have done without you after they went abroad for seven months and left me with Auntie Mil. I think they could have waited for that trip, Ernest. I would have been well enough to go in a few months.

But—my sister did have her heart set on that trip. In fact, she said she had to go. I've never known why she didn't tell us about it. She was so shocked to find us married, Ernest. I don't think she ever approved of you, but together we won her over to our side, didn't we? I think she is almost as fond of you as I am now, Ernest—almost. Good night, darling!"

A few mornings later, Edith, alone at breakfast, said to Lucy, "I cannot imagine what is keeping Miss Colbert. She has never been late for a meal. If she were ill I'm quite sure she would ring."

"Miss Colbert's bell don't work, mum."

"Oh, I'd forgotten that. I'd meant to have that fixed. But then she's never had any occasion to use the bell. So healthy! But, perhaps, you'd better look in anyhow."

Miss Colbert was in bed. She attempted a smile when Lucy entered. "I must have gotten a chill, Lucy. I tried to get up."

"Anyone would get a chill in this room, mum. I'll get a fire started. Then would you like me to get Mrs. Calders?"

"No, not just now, please. Only the fire. It is so cold." She watched Lucy start the fire, and after seeing it blaze, she said, "I'd like some tea, please."

"Tea, my dear?" said Edith, at the door. "Are you ill?" She came in, walked to the bed, and laid a hand on her sister's forehead. "You're a little feverish. Just enough to make you uncomfortable, but we'll call the doctor any-

way. Here, let me straighten your pillow."

"Please—one minute."

"It will be more comfortable," said Edith, shaking the pillow. "Well, my dear, what's this?" She bent over to pick from the floor the small packet of letters and the photographs.

"Give them back, Edith. Give them back to me. They're mine."

"But of course, dear. Of course, they are yours. And why shouldn't you have them? Such a good picture of Ernest! I have one just like it, and what a charming inscription. The one on mine is similar but conveys a deeper meaning."

She smiled, handed the letters and pictures to Miss Colbert. "It is not wise to dwell on what might have been, my dear. Not wise at all."

"Please go now."

"Of course, dear." Edith touched the letter. "And this hasn't helped, has it? I shall send your tea, and since you are not able to get up—lunch, too. That will make it just like old days for me, dear. Just Ernest and I at the table. Lucy says the bell does not work in this room. I shall send you one before I go out. It is such a fine day I believe I'll go sit with Ernest out in the summerhouse."

"I'll get up for lunch, Edith."

"No, my dear, I forbid it. You must rest. Perhaps it would be best to get the doctor—I feel you have more than fever."

The doctor was not sent for. Miss Colbert, weak and rather

more feverish, came down for lunch.

"I had hoped you would rest and read and sleep. You must not concern yourself with me. I am not lonely, you know. I have Ernest. We had a lovely morning."

"Did you?"

"Oh yes. A perfect morning. Ernest was so upset to hear of your illness. He is so considerate—and he was so touched when I told him about the picture and the letters. He threw all yours away. Rather, I found them, and he told me to do it. Of course, that was so long ago. And you can imagine how touched he was that you continue to save his little notes. Sitting in the summerhouse with him talking over the old days was such a comfort. We decided to have lunch there. But when Lucy brought down Ernest's tray and said that you had come downstairs, dear—well, Ernest just said he'd eat alone and I just hurried up to the house to eat with you. Come, dear, eat. It will give you strength. After I've seen you eat a good lunch, I'll go back to the summerhouse."

Miss Colbert ate with little appetite and went immediately to her room. The fire was ablazing. "How warm," she said aloud, "how warm! The first time my room has ever been warm." She took her packet of letters and the picture and sank into the chair nearest the fire. She drew her shawl more closely around her and sat motionless watching the flames for some time. When she heard

Edith's step, she sank further back in her chair.

Edith crossed the room and sat down opposite her sister. Miss Colbert said, "I should like to have dinner in my room this evening. May I?"

"Of course you may, my dear. I felt getting up for lunch would be tiring." Her eyes fixed on Miss Colbert's clutched hands. "I wouldn't brood, dear."

Miss Colbert stood up, looked for a moment at Edith, and then threw the letters and pictures into the fire. She stood silent until they were consumed and then walked with a firm step to her bed.

"How wise you are," Edith remarked. "Now I'd better go make arrangements for your dinner."

* * * * *

"How is Miss Colbert, Lucy?" asked Edith when coffee was served.

"She seems much better, mum. Much better and in really good spirits."

Edith finished her coffee and climbed to Miss Colbert's room. The door was locked. She knocked. She knocked again. She knocked louder, but there was no answer. Edith called for Lucy. She called to her sister. There was still no answer from Miss Colbert's room; but as Edith and Lucy stood quietly in front of the locked door wondering what to do next, they heard a whispering sound growing louder as they listened.

The sound came from Ernest's room. Lucy shrank back but Edith rushed to the door. It, too, was locked and she beat upon it with her hands before she hurried into her own room knowing that the other door, her door, that led to Ernest's room would also be bolted.

Lucy stood behind her. "We must force these doors," cried Edith. "We must force them at once!" She listened. There were two voices coming from her husband's room. She knew there were two, and she began beating the door again and screaming.

Cook, roused by the cries, hur-

ried up the stairs. She glanced at Lucy pressed against a wall, at Edith beating on the door. She went at once to Edith.

The whispers had become louder, fully audible. They made not an ordinary conversation—not what one would willingly overhear. Miss Colbert's voice was the dominant, but it was not to hers that Cook and Edith listened. It was the other—the other that Cook knew. Before she caught Edith, falling to the floor, she heard his laughs and a loud exultant cry from Miss Colbert.

"Edith! Edith! He's back. And this time he's back for me!"

Co-existence—Until.

—Robert Blackwood

Peace—The day after the bomb drops.

—Robert Blackwood

REFRACTION

A queer
gait—
a dead right foot and springy left;
a sagging
jaw
wagging
now and then to thaw
the frozen, deaf-to-
all-else ear;
a constant trait
of searching touch
to succor blinking
eyes that see—
and dream—
but seem to be
as blind as pure-pink
pupils straining in a hutch
of rabbits seem;
God forbid I generate
a child
a son
perhaps
or daughter
such as this—
a wild,
wide miss
a lapse
of fate—
and yet I'll love my image in the Sun
though seen through rippled water

—Francis Creel

*Mary C. Pursley
Creative Writing
Contest Award
1962*

PATRIOTISM

The Scarce Commodity

by Billie Bingham

With all its surpluses the wealthy, progressive United States is experiencing and suffering a shortage. Ardent nationalism is waning, and without it, there can be no patriotism. This deficit is not a figment of the imagination of various anti-communist, radical rightists, and patriotic movements—it is real. What is patriotism, this commodity which is so scarce? In the dictionary it is defined as "the love and loyal or zealous support of one's own country, especially in all matters involving other countries." It is one of the many qualities which, during the country's formative years, Americans possessed in abundance and displayed proudly.

More than a quality, patriotism is the attitude of millions of devoted, less selfish, earlier Americans with whom it came natural to think of "America first." They believed wholeheartedly in the patriot words of Stephen Decatur, "Our country! In her intercourse with foreign nations may she always be right; but our country,

right or wrong!" The builders of the United States knew and seldom regressed from the principles that man's first duty is to God, his second to his country, and his third to himself. Patriots who believed in these principles fill the pages of American history.

To men like Nathan Hale, Paul Revere, Patrick Henry, many great American presidents, and to the millions of Americans who have proudly worn the uniform of their country through the most crucial periods in United States history, the Civil War, World War I, and World War II, patriotism was no empty word. Those Americans were courageous people. They believed in the dignity of man and the worth of the United States. In the minds of those men their country stood for the protection of their security and their God-given rights. The enemy was whatever weakened the country and imperiled its future. Once the enemy was known, they reacted quickly and positively, ready and willing to face the danger whatever the cost.

Today the danger has never been more clearly revealed; the enemy has never been more des-

picable. But do hoards of patriotic Americans rally about their government upholding and defending it? No, patriotism is so nearly obscured by individual selfishness that it appears to be non-existent. It seems to have been replaced with complacency, discontent, and despair. The senior citizens generally exemplify despair. Saddened and dazed by the whole turn of events of the past two decades, they wail that they simply "don't know what the world is coming to." What they really mean is that they don't understand the products of their own handiwork. Although they have failed to teach their children to love their country, to respect its history of accomplishment, to make sacrifices willingly to keep it strong, do they nevertheless expect an aggregation of Nathan Hales?

The results of their shortcomings are two pitiable types of humanity, the "fault-finders" and the "apathetics." The latter displays a "laissez-faire" attitude or a "do nothing" point of view. This attitude says that everything will come out all right but does nothing to make sure of it. It is simply dull apathy. Often in back of this attitude there is a faith in the continuity of all things as they are at present. Consciously or subconsciously, its slogan is "As it was in the beginning, is now, and ever shall be."

The fault-finders, who possess, as do the apathetics, more clothing, food, leisure, money, and freedom than any other people in the

world, tirelessly complain. These whale-mouthing grumblers relate to their neighbors and to the whole world how much tax they must pay but fail to enumerate the benefits expected, demanded and received; how corrupt and extravagant government officials are but never mention the fact that they were too busy to go to the polls last election; how they deplore racial segregation and discrimination but usually mean this in areas where they are not directly involved; how extensive unemployment has become but fail to comprehend that it is the result of the high degree of productivity of a capitalistic system which works too well.

Their dissatisfactions are endless. They complain of the existence of poverty, ignorance, and mental illness, but never seem to grasp the overall picture. All these are problems; however, they stand out because of the general well-being of the great majority of Americans. Because of their daily practice of degrading and abusing American society and an obvious lack of strong leadership and faith, they, like their elders, are failing their children.

Who are these children? They are America's teenagers and college students who in large numbers seem to feel that patriotism is outmoded. They have a disease called "thermonuclear jitters"—which has caused them to adopt a pacifist attitude while many lesser nations of the world inflict abuses on their country. Castro hi-jacks

American planes; Castro confiscates American property at will and gets away with it; all sorts of countries, most of whom have not the slightest idea what America stands for, blackmail her into doling out economic and military aid. Among Khrushchev's many threats is the threat to bury the United States.

In the midst of all this, a seventeen year old, straight-A high school senior of Redding, Connecticut, wrote in the school paper, ironically called "The Patriot," that patriotism is narrow, breeds hatred, and unleashes war, death, and destruction upon the world. She asserted, "To be a patriotic American citizen in the latter half of the 20th century is to be a blindly stupid human being. It is to be an arrogant, selfish, self-centered person, full of potential hate." This teenager, along with many of her generation, is a victim of an educational system which taught that loyalty to the nation must be replaced with loyalty to the world. Such people believe that if they will just bargain and compromise with all the world's despots and their forces of aggression, the world will become one big happy family.

Another example of the confused thinking of America's youth was displayed last fall on the campus of the University of Wisconsin. A group of students there staged a demonstration to remind Americans of the wrong their country committed by using the atom bomb on Hiroshima. Would

it have been more humane to sacrifice a million uniformed Americans on the beaches of Japan? Evidently, the educational institutions in the United States failed to inform these young people who were mere babies during World War II that the Japanese started the war. They should be told that the proud history of their country does not include armed aggressive actions against other nations but does include many chapters telling of a strong determination on the part of Americans to defend themselves upon attack.

No one would argue that it would not be to the advantage of humanity if all nations could disarm and end all wars. Everyone would relish living in a world in which everyone loved everyone else. Nevertheless, the governmental structure is weakened whenever and wherever there are Americans whose sense of values leads them to put last things first and first things last. To have the strongest, best trained armed forces is not enough for survival; a nation's strength is only as great as the morale of its people. Greece and Rome, each a giant in its day, eventually fell because of internal weaknesses.

Although patriotism is scarce in America, it is not totally lacking. There are yet some Americans who feel a distinct pride in serving their country. Recently, a courageous American, Colonel John Glenn, made a dangerous orbital flight in his country's interest. The spirit of patriotism needs only to

be revived. There must be a renewed emphasis in the schools on education designed to promote the spirit of patriotism and to create a better understanding of who and what the enemy is. It behooves all freedom loving Americans to get up from their easy chairs in front

of their television sets and be counted. President Kennedy in his Inaugural Address a year ago urged, "And so my fellow Americans: ask not what your country can do for you . . . ask what you can do for your country."

Kindergarteners

Machines of states and nations, woe betide,
when students storm and stump the countryside!
And woe, political stability,
when breaks on shore our unpacific sea!
Beware these ivied halls and gothic door,
old men; take care they keep their ivy, for
these halls are straight and strict as rifle steel
and spew a charge as true when fired by zeal.

OUR CLAMOR fills the land we love, for, truth,
such is and always was the way of youth.
We file our plaints and seldom stop to think
that you, in college, aired the selfsame stink.
There is a dearth of us who realize
that fire, like man, just gradually dies,
and just as well it does, for bursts of hell
bring quicker ash and singe our face as well.
What good, you say, to suddenly explode
and run the risk of rutting up the road?
But still, a like amount of calories

a glowing coal eventually frees.
And so, from shining coal or open flame,
the net effect should always be the same.
We students see an ugly stain on earth
and think it might have had a smaller girth
if each good man had spent himself and died
in one great flash, in one great valiant stride!
So whence the sorry state we all abide?
And why the monologue unholy pride
can whisper in man's ear on every side?
So why unchecked the diabolic tide?

BUT LET US LOOK at Campus, USA:
the ancient campus, campus built today,
the earnest campus, campus light and gay,
and campus, champ of NCAA,
campus coed, campus women's, men's,
campus wayout home of beatnik dens,
campus strict, where freshmen work to pass,
campus soft, where seniors sleep in class,
campus somewhat dead, campus quick,
campus state, campus Catholic,
campus built to educate the man,
campus not worth an educated damn.

Enough? Enough to make us laugh or cry
or hang our heads in shame or hold them high?
We see now why the world is battered up,
as sure as that which keeps the catbird up,
at night, as well as on the morning breeze
that wafts him south to late-autumnal trees:
our fires too often die with fuel unburned,
with work undone, with history's challenge spurned.

WE DIDN'T MAKE THIS MESS we say each time
this earth and what-it-should-be do not rhyme.
The wars that stalk the earth and kill young breed

are made from dead men's bones and old men's greed.
We pay our debt in blood and misery;
what further do we owe society?
Inflationary death is charting steep,
for life too freely spent just makes it cheap.
On such an earth we're born; on such we'll die;
in such we will, till resurrection, lie,
while children who might call us father live
and die and lie in coffins tentative.
So is it any special wonder then
we have short goals and wax ideals, old men?
Behind what cause should students rightly range
when such the earth? What else but fiery change?

It's right, of course, we try to see ourselves
as deuces twos, as dozens look on twelves.
Perhaps it will be painful, but we're young
and hence not quite so apt to come unstrung
at seeing what must be a hideous sight
and fully capable of causing fright
unthought, save for the salve of self-deceit,
which, heaven be thanked, can keep us on our feet.

AND SO, OLD MEN, the times are much the same,
and adolescents play the same old game
you played when you were young. The rules, we hope,
are not determined by the horoscope:
the field we have by circumstance of birth;
the game we have as heirs, for what it's worth;
and heirs to us will have it when our dusk
has turned into their dawn—and they will busk
their limbs with pads as best they can, and play
with verve or lack of it, as yesterday
you played, as we today. And yet we hold
a faint suspicion some advance untold
will someday be made to ease the rules
and make a game a game, and schools, schools.

—Francis Creel

The Magic



by Eberhard J. Gabriel

Potion

Pete slowly walked out into the fresh air and turned to take another look at the shingle flapping in the wind.

MADAME LORRAINE,
SPIRITUALIST

Hours

Weekdays 9-11 : 2-5
And by Appointment

His gaze wandered to the vial in his hand. "So this is a magic potion to inject new life into my marriage. It's probably just water. I don't know why I went there in the first place. Just curiosity, I guess." As he moved toward the car, the small purple glass disappeared into his coat pocket and was forgotten on the way home.

Pete Chandeler was a rising young man in the insurance field. After five years of marriage with Eileen, everything had become routine. The little expressions of love had long been lost in the shuffle of meetings, appointments, and separate recreational interests. Pete and Eileen had settled down to a life which statisticians might record as typical suburban existence. In his effort to escape this routine, he had visited the spiritualist, who had given him a very special lotion.

The next morning Pete went

through the routine of readying himself for the coming day. As he put on his suit he felt the flask and brought it into view. "I don't believe in it, but a few drops won't hurt." He took the cap off, sniffed, and sprinkled the contents liberally over his face. Fortified by the lotion he came down to breakfast. As usual, Eileen had her hair up, no makeup, and an old housecoat hung loosely from her shoulders. He bent down to kiss her lightly on the cheek, then stopped.

"Don't you love me anymore? How about a real kiss!" she cooed. Surprised, he kissed her again. This time it was full of fervor and excitement, holding a promise of things to come.

"Do you have to leave so early? Can't you stay a little?" she continued.

"I'm already late, but I'll be home early." Yes, he would definitely be home early tonight. Was the potion already working? She had never acted this way at breakfast.

All the way downtown he felt his ego building up. Of course this was no real proof. After all, she is my wife. If Miss Frances, my secretary, would be friendly, that would be proof. She had never shown any animation or friendliness beyond the customary salutations. By the time he walked into the insurance offices he began to have doubts as to the effectiveness of the lotion, even though the elevator girl had been unusually friendly and talkative. Still he could hardly contain his anticipa-

tion as he walked into his office and asked Miss Frances to follow him.

He asked her to take a letter. She was still as cold as ever. When

the dictating was finished, she asked him if there was anything more. For the first time that he could remember, there was a sweetness in her voice and a cer-



tain emphasis on the word "anything." Before he had a chance to talk she came closer.

"If there is *anything* I can do for you, Mr. Chandeler, I'd be most happy to accomodate you," she hinted as she put her arms around his neck and drew closer—much closer.

He quickly disengaged her arms and said, "No! No, thank you. That will be all."

He sailed through the rest of the day, glowing with new confidence, new power over women which came miraculously from a small violet vial. Peter hurried out of the office at the end of the day. He couldn't wait to get home and see Eileen. He had certainly changed — Madame Lorraine's newest creation.

Frances walked out of the office with new confidence too. She could act. This little scene had proved it. Had she not fooled Mr. Chandeler. He was completely convinced that she was warm and could fall in love with him. Yes, she would be a good romantic lead

in the suburban little theater's new play.

At home Eileen waited. She had put up her hair and put on an enticing dress. When was the last time she had set a table by candle-light? Well, from now on things would be different. She should have read that marriage book earlier, and have realized what kind of rut they were in. She would be a good and loving wife, and their marriage would regain its luster. Now, she had just time to check everything once more before Pete opened the door and walked into her outstretched arms.

What was that purple lotion, that violet magic? Pete glowed. It was positively the best investment he ever made. He must remember never to allow the supply to run out. Evaporation could wreck a marriage. A weekly fin to Madame Lorraine was small price for Paradise. And maybe he could use less expensive after-shave and cologne. The violet vial did scent faintly of Yardley's lavender anyway.

The Double-Edged Sword

Since the time when penicillin and the numerous drugs of its type came into common usage, there is a new word that has come into frequent usage in the public's vocabulary. This word is antibiotics. Some prefer to speak glibly of them as the "wonder drugs" in respect for their extremely beneficial nature in the conquest of disease.

Due to the great amounts of antibiotics that are produced and used each year for medical purposes, many well-wishing individuals develop a false illusion that they can prescribe the "wonder drugs" for themselves. This has come about as a result of the relatively high specificity of some antibiotics for certain rather common diseases. One person notes perhaps correctly that he has tonsillitis; he immediately consults the home medical guide and decides that he requires penicillin. Another, has tuberculosis and indicates his need of streptomycin. Some, being interested naturally in their

personal appearance, find that the armamentarium of cosmetics at the local drug store is just not enough. He informs his physician that his social life would be greatly enhanced if bacitracin were one of his medicine-cabinet necessities. As a result of this "common knowledge" of the antibiotics many people attempt to treat themselves.

These individuals are acting as a result of misunderstanding concerning these powerful drugs. The antibiotics have been in the past described as double-edged swords. This is indeed the case and just how this is so will become evident in the following discussion.

The word "antibiotic" which literally means "against life" expresses the power and value of these drugs. Antibiotics *destroy* life or prevent the growth of living things. It is true that these drugs are used to destroy the disease-producing bacteria; however, they are capable of destroying other life as well. There are known today approximately 150 antibiotics of which barely a handful are used. Many are not used because they are too unstable, in-

*Hanley Science
Essay Award, 1962*

by Donald Hunneshagen

effective in body fluids, poorly absorbed into the blood stream or are toxic (poisonous to the body cells). Drug companies are striving to produce more purified or more derived types of antibiotics which are less likely to have toxic effects.

Antibiotics have another weakness. Their effect may disappear as the bacteria themselves attack the drug in self defense. To counteract this response, large dosages are given in order to kill the germs before they have a chance to fight back. Sometimes a second drug is given when the first has lost its power. Would the home medical dictionary tell one how to know if this had happened?

Another danger of antibiotic usage is that they may shorten the clotting time of blood. Blood clots form much more quickly and if one gets struck in a small blood vessel in the brain or near the heart, the result could be fatal. Please do not loose faith in the "wonder drugs" now; just leave them to the wisdom of your physician.

Antibiotics are not peculiar to the twentieth century. Plant extracts were found in Europe to be effective against malaria and amebic dysentery in the seventeenth century. No one knew why; that is, there was no rationale or basic conceptual scheme of chemotherapy. It was Paul Ehrlich who gave us the modern basis of chemotherapy. Being a chemist he proposed the action of drugs is due to their chemical properties which differ-

entially inhibit the growth of harmful (pathogenic) bacteria but do not harm the host. We speak of Ehrlich's "magic bullet" as he proposed that there were "charmed bullets logically designed for specific target sites inside the invading organisms." Drugs of this type that are specific for only one harmful organism in the body are extremely rare.

Antibiotics are antimicrobial agents produced by a variety of microorganisms found among the filamentous fungi or molds, yeasts, actinomycetes (microorganisms approximately intermediate between bacteria and molds), and bacteria. They are both chemically and biologically distinct from the common antiseptic and germicidal agents. They are primarily bacteriostatic, that is, they inhibit the growth of bacteria without directly and immediately killing them.

Antibiotic substances are somewhat selective in their antibacterial action. Some affect mostly Gram-positive bacteria while others affect the Gram-negative. A Gram-positive bacterium is one that is stained by a process developed by Gram and is indicated by a dark purple color. The Gram-negative bacteria fail to hold the Gram stain. There are however some antibiotics that inhibit the growth of both types. The term "antibiotic spectrum" indicates the range of activity of a drug against a number of bacteria of various Gram-positive and Gram-negative groups.

Different kinds of antibiotics act on their susceptible microbes in different ways, depending on the special biochemical properties of the drug and the physiological systems of the bacteria. In the case of penicillin inhibiting the growth of Gram-positive bacteria, recent evidence seems to indicate that the utilization of uridine nucleotide is blocked. Uridine nucleotide is used in the formation of the bacterial cell wall. Tetracyclines probably prevent the use of essential ions such as the magnesium, iron and manganese ions in the enzyme systems essential for protein synthesis in growing bacteria.

The structural resemblance of some antibiotics to essential metabolites makes possible direct interference in the specific steps of normal metabolism. In this case, the bacteria are "fooled" into taking the antibiotic instead of their normal nutrient since the bacteria cannot tell the difference between the two. As a result the bacteria are killed.

Since there are so many different antibiotics, a complete description of how each affects its susceptible microorganism would be endless. In general therefore antibiotics interfere with growth and metabolism of microorganisms which gradually die in one of the following ways. The antibiotic may substitute for an essential nutrient or interfere with vitamin utilization. Some may modify the intermediary metabolism of the bacterial cell or combine with a

substrate or one of its constituents, which is thereby made inactive for bacterial utilization. There are a few antibiotics that compete for enzymes required by bacteria while others may interfere with the respiratory mechanism, especially the hydrogenase system. Some antibiotics directly inhibit the cellular oxidation process and others act as an enzyme system and produce in the medium oxidation products such as peroxides that are harmful to the bacterial cells. Antibiotics may favor certain lytic mechanisms in micro-organisms or, lastly, they may act as detergents affecting the surface tension of the bacteria.

Reference has been made to the "double-edged" nature of antibiotics. The harmful effects of these drugs have been outlined and the dangers of their improper use are evident. The beneficial nature of these substances however extends far beyond what may be suspected from our acquaintance with them as used in the field of medicine. Important applications of antibiotics have been made in agriculture. Antibiotic-fed pigs, poultry, horses, and mink grow faster, require less feed, and show lower mortality rates. Of considerable interest is the use of antibiotics with sex hormones to produce better capons and superior beef. Growth in human beings seems also to be increased through low-level administration of certain antibiotics.

Antibiotics are being developed for a variety of other uses; these

include everything from sprays for the arrest of bacterial and fungus diseases of plants to agents for increasing fecundity in cattle, agents for short-term preservation of foods, and so on. Preparation for slaughtering steers in some countries includes injection of antibiotic preservatives; these are carried into the tissues of the animal, so that later on the meat can be hung in warm rooms to bring about tenderization without spoilage. Extensive studies have shown the value of antibiotics in

the preservation of fish, chickens, hamburger, vegetables, and other perishable foods. Antibiotics even improve the taste of whiskey in that they inhibit those bacteria that cause souring of milk in the fermenting mash.

Clearly the antibiotics are both dangerous and at the same time one of the most beneficial products of nature. The dangers however are greatly outnumbered by the many and varied good effects. Cautious and discriminate use by a competent physician is the rule.

Virus as the Cause of Cancer

by
*Kenneth
Ahler*

*Hanley Science
Essay Award, 1962*

One of the great mysteries of human pathology is the etiology and nature of cancer. The term itself is a poor one for it leads a person to believe that cancer is a single disease or pathological condition. Actually there is a great variety of cancers, more properly called tumors or neoplasms. These occur both in plants and animals and may have a variety of causative agents. Some plant neoplasms are due to bacteria, some to viruses. Animal neoplasms and tumors have been shown to be caused by several factors among which viruses and cyclic hydrocarbons lead the field. Recently however, the idea has been growing that all animal

neoplasms are caused by viruses.

The cells that make up a tumor are not greatly different from corresponding normal tissue. Yet they are to be distinguished from pathological hyperplasia (an exaggerated growth of normal cells, as in the formation of excessive bone tissue in the callus around a bone fracture) by their lack of coordination with the rest of the body. Tumors live almost an "independent life" within the body and indeed some authors refer to them as "separate parasitic species" within the body.

The degree of parasitism upon the organism varies from tumor to tumor. Benign neoplasms are those which grow without actively destroying neighboring organs or disrupting the metabolism of the organism, and with no tendency to produce metastases (secondary tumors caused by transfer and implantation of tumor cells into the organs). A typical benign tumor such as a lipoma or a fibroma is simply a mechanical nuisance to the body as it gets in the way of normal organs. Many times these growths become malignant tumors, or cancer as we commonly refer to it. Cancers can be defined as neoplasms which grow very rapidly, whose cells exhibit frequent and often abnormal mitosis (cell division) which leads to infiltration and destruction of normal tissues and organs and produce metastases.

Actually a deeper understanding of cancer can be gained if we understand that in multicellular

organisms, all cells have a "natural" growth rate which is much higher than they usually exhibit. The rate of cell division is carefully controlled by a complex system which is not completely understood, but which must exist. Consider, for instance, when a person reaches maturity, he ceases to grow and develop as much as he once did—his growth is being controlled. All cells then have a latent growth potential which is greater than the normal growth exhibited.

Sometimes a return to the latent growth potential is temporarily permitted, as in wound healing or regeneration, but this is then brought under control again. If something should happen to unbalance the growth control system and remove its power, cells would continue to grow unchecked.

Certain viruses have the power to unbalance the control system and do, in some instances incite, activate and accompany neoplasia. This is the point we will develop further. We do not mean to infer, as will be pointed out below, that viruses are the only agents which are capable of causing a loss of balance of the growth control system. Certainly hormones and other agents have an effect on this, but we are interested in the cancer-virus implication of this unbalance. We shall try to see just how it is possible for a virus to do this, but first let us briefly look at the nature of a virus.

Viruses are often described as

entities intermediate between living and non-living. They do not exhibit easily demonstrable respiration, metabolism and the capacity for independent reproduction. They are reproduced, fully formed, by the cells they infect. They "live" in the cytoplasm, i.e., in the protoplasmic mass which surrounds the nucleus of a cell, or in the nucleus itself.

In any event, we are concerned with agents which are extremely small. A fair-sized virus may be up to 50 milimicrons in diameter, or 0.000 00197 inch. The virus with few exceptions cannot be seen with the ordinary microscope but only with an electron microscope.

Viruses usually possess a very simple structure: a core composed of a complex nucleic acid which is surrounded by a protein "jacket." In action, viruses are thought to adhere to a cell and to inject it with their nucleic acid, at the same time shedding their protein jackets. The virus' nucleic acid is the agent that works to reproduce the virus with the aid of the host cell, and finally to infect other cells. It may well be that virus DNA (a type of nucleic acid) attaches itself to the DNA of the host cell, which makes up the chromosomes, and thus is passed down from cell to cell and from one generation to the next.

The theory that cancer might be caused by viruses was first advanced by Borrel in 1903. Seven years later, Dr. Francis Rous carried out experiments on cancerous

chickens. Rous took material from the chicken's breast, ground it ultrafine to smash the cells, filtered the material through silica and obtained a cell-free liquid which when injected into healthy chickens produced a sarcoma (cancer of the connective tissue) exactly as in the original host animal. Rous postulated virus as the cause and was immediately the object of much criticism by his colleagues. Rous went on to find other types of fowl cancers caused by virus. This cancer virus of fowl tumors is not contagious but is transmitted from hen to chick through the egg and possibly through the sperm.

The suggestion was put forward that the virus produced only the stimulus for the tumoral transformations of the cells. The virus, however, continued to reproduce and to play a role in the neoplastic development of the cell line derived from the initially infected cell.

An interesting virus tumor in rabbits is of great interest in explaining the possibility of human virus tumors. Rabbits are often afflicted with papilloma. The virus extracted from the papillomas induces an epithelial growth of cancerous tissue. The remarkable feature of rabbit papilloma virus is that its inoculation into the domestic rabbit (an animal belonging in a different genus from the wild rabbit) results in the formation of papilloma that are similar to those of wild rabbits, but from which little or no infectious virus

can be isolated. No tumor-producing agent is present in extracts of these tumors, nor are physical particles resembling those of papilloma virus found in amounts similar to those in the papilloma of wild rabbits. This does not mean that there are no virus agents present in these tumors. Using serological techniques, it can be demonstrated that the virus is present in a "masked" or noninfectious form. Rabbits which have a papilloma have antibodies to the viruses that can be demonstrated to be present. In this way we know virus is present in domestic rabbits—because they have antibodies against the virus. These viruses, although masked, persist as a component of the tumor cell.

There are many other cases in which specific virus agents have been shown to be the cause of certain types of tumors. In mice there is a carcinoma of the mammary glands transmitted by a virus agent in the milk. Many viroids of lower forms are also known.

Our specific question now is: what is the exact role of viruses in tumor growth. The DNA of a virus can actually take over the control of normal cell reproduction. For instance one particular DNA from virus grown on mouse embryo cells gave many cases of tumors when injected into different laboratory animals. In other words, viruses have some "master mold" from which new viruses can be produced. They have the unique power of being able to use other cells' DNA to replicate

themselves. In contrast to body materials, however, viruses usually change cells they inhabit to cause disease.

As we have noticed above, inability to isolate virus does not mean virus is not present. Indeed there is no evidence that the neoplastic character of the cells of tumors formed in response to tumor viruses can be maintained in the absence of virus. A virus is also evidently important in determining the characteristics of a tumor. The virus is specific for its host and for the condition it can cause in that host. Only very rarely can a virus cause formation of a new type of tumor by infecting a different type of cell. The tumor virus replicates itself inside the cell frequently causing extravagant reproduction of the host cells. Furthermore the virus itself may be the cause, or one cause, for the spreading of a cancer, since the virus can circulate in the blood stream.

In the light of the above, the argument that viruses are not the cause of human cancer is so far only negatively demonstrated when we consider how little we know about viruses, and how recently techniques have been developed which can detect them. In other words, absence of viruses from tumors does not necessarily mean that viruses did not cause them. There may be just too few of them to be detected by available techniques, or, perhaps, human cancer viruses are undetectable because they hide in the mass-

es of the cellular nucleic acid.

It is just about at this point that scientific fact stops and scientific theory and reasoning begins. Indeed the relation of virus and host may be too intimate for detection of the virus, but yet there are many cases in which cell-free extracts of tumors do not reproduce tumors. This fact caused most authorities to believe that the causes of tumors are multiple and that virus is not the ultimate cause of all cancers. Neoplastic transformation appears to be a response to any one of a number of cell disturbances which return the cell to its latent growth potential.

The question lies in this: Need all tumors have a virus?—and if so, how can we find out?—What is this masking phenomenon and how does it relate to the problem? As a start in answering these questions and in finding an answer let us review our rabbit papilloma example. The virus extracted from wild rabbits causes tumors in tame rabbits in which virus particles cannot be found. The domestic rabbit contains an antibody against the virus which leads us to conclude the virus is present but it is masked—we cannot directly see it or isolate it. Perhaps a similar masking occurs in all tumors in which viruses have not been located.

Could the masking be due to a combination of the virus (an antigen) with its antibody? (as for example antibody reacts against bacteria in our bodies to protect us against infection). While there is

evidence for the union of a virus with its specific antibody, there is so far no proof that the masking effect is caused in this manner. Perhaps, a more reasonable answer is that the virus remains immature and never reaches maturation (as is the case with many non-tumor-forming viruses.) Perhaps the domestic rabbit does not contain some essential material needed for maturation. In human application—perhaps tumors in which no virus has yet been found are in such a state because humans do not have the necessary materials for maturation. Perhaps most human cancers are just like papilloma in domestic rabbits—we cannot find the virus. The only difference is, that we do not have isolated viruses with which we can check the antibody content as we can do in the case of the rabbit. It is very hard to test for a "virus-like something" in the blood! Yet many tumor growths are suppressed by antibodies. Or at least in the case of bacterial viruses all available evidence suggests that most of the antigens (materials which cause antibodies to form) of mature virus are acquired only during maturation and are not present in the prophage (or immature phase).

So our story is something like the classical tale of the "Princess and the Tiger"—it has no ending—yet. Many responsible scientists maintain that a virus does exist for every tumor and cancer, but because of the tendency for viruses to remain "masked" we cannot

isolate them nor do we even recognize them. According to these investigators, we are going blindly around if we are looking for other causative agents of cancer.

There have been many attempts of reconciliation of the virus hypothesis with chemical carcinogenesis. Various carcinogenic agents may produce localized conditions that enhance virus activity. The carcinogen might either produce a nonspecific tissue reaction, which could make these tissue cells

susceptible to the neoplastic influence of a virus already present within them, or it might well rest in the viruses. The implications of this possibility are tremendous. Medicine has made tremendous gains against other virus infections in the past and if a disease such as cancer could be traced to a group (and it would have to group) of viruses, then a cure for the forms of cancer would be on the way.